ones are known in this and allied genera to be only sexual. We need a careful study of secondary sexual characters in tachinid genera.

NOTES ON SMERINTHUS CERYSII KIRBY.

BY F. L. HARVEY, ORONO, ME.

In his Monograph of the Sphingidae, p. 222, Prof. J. B. Smith says the early stages of the above species are entirely unknown. We are not aware that anything has since been published and presume the following notes may prove interesting.

On May 13, 1895, we received a pair of *S. cerysii* from Mr. Albion Townes, Winthrop, Me. They were mating when captured and remained together for two hours. The next morning there were several eggs in the box. The female continued to lay eggs until May 17, making the period of ovulation about five days. The number of eggs laid was about 160. The eggs began to hatch about May 27 and continued to emerge for about five days making the egg period 15 days.

Mr. Ora W. Knight, who had the care of most of the larvae and succeeded in carrying some through all of the changes, made the following notes:

"Placed the larvae in a gauze net upon *Salix sericea* Marshall. They were fed in this way until June 25, when I was obliged to take them home and they were afterwards fed upon picked leaves. They did not thrive so well and many died, not having strength to pupate. Seven entered the pupa state about July 13. Of these only five emerged, and they unusually small. The great mortality may have been in part due to insufficient food, but this species seems to be very tender, which accounts for its scarcity in nature."

Prof. Carl Braun secured a female on willow in his garden, Bangor, Me., which laid nearly 200 eggs, and succeeded in getting about 50 pupae from which only one male and one female emerged. His specimens were fed while young upon willow and after the last molt upon poplar.

Mr. Knight has found the larvae of this species feeding upon Balm of Gilead. The larvae are subjected to the depredations of parasites.

The following description of the eggs and larvae were made by the writer.

Eggs pale green, oblate spheroid, much flattened, 2 mm. long.

Larvae just hatched, 4 mm. long. Apple green, horn pale green, when hatched, but turning black inside of two hours. First molt on the seventh day, when the horn became lighter colored. The other molts we did not observe.

Mature larvae apple green, about 38 mm. long, covered with minute granulations. Yellow stripe on each side of head. Seven oblique pale yellow stripes on each side of the body. The posterior wider and brighter,

extending to the rose pink slightly granulated horn. Along each side above the oblique stripes and extending from the head to the posterior oblique stripe is a yellow band. The nature of this band is the principal mark by which the larvae of this species is distinguished from that of *S. geminatus*. The practiced eye readily distinguishes between the above species by this band. Fore legs pink, caudal shields darker green than the rest of the body. Head and dorsum of next segment not granulated. Spiracles yellow with a carmine areola.

An excellent beginning toward the natural history of our aquatic insects has just been published by C. A. Hart in the bulletin of the natural history laboratory of Illinois. We trust it is a forecast of the work to be done at the biological experiment station of the University of Illinois, where Mr. Hart is entomologist, and next summer's programme of which has just been issued. The paper is chiefly devoted to Diptera, especially Tipulidae, Tabanidae and Stratiomyidae, and is rendered much more useful by the liberal use of keys and by excellent half-tone plates.